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What is Claimed:

1 1. A method for detecting a plurality of heart sounds in an auscultatory
2 process comprising the steps of:

3 providing a predetermined protocol corresponding with a plurality of
4 recording locations on a patient;

5 instructing a user to follow the predetermined protocol for recording the
6 plurality of heart sounds at the plurality of recording locations using at least one of a voice
7 guided protocol and a graphical user interface; and

8 detecting and recording the heart sounds according to the predetermined
9 protocol.

1 2. The method according to claim 1 wherein the step of detecting and
2 recording the heart sounds includes detecting the plurality of heart sounds using a non-
3 invasive passive acoustic sensor to detect heart sounds from well-defined and standard
4 positions on a chest surface.

1 3. The method according to claim 1 further comprising the step of
2 displaying the recorded heart sounds in a graphical manner.

1 4. The method according to claim 1 further comprising the step of
2 automatically analyzing the recorded heart sounds to determine auscultatory findings.

1 5. The method according to claim 4 further comprising the step of
2 displaying a compilation of results of the analyzed heart sounds in a graphical manner.

1 6. The method according to claim 5 wherein the step of displaying the
2 compilation of results further comprises the step of textually describing the determined
3 auscultatory findings.

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1 7. The method according to claim 6 wherein the auscultatory findings
2 are described in terms of standard clinical auscultatory findings used by physicians to
3 make diagnostic and referral decisions.

1 8. The method according to claim 5 further comprising analyzing the
2 heart sounds for a presence of murmurs.

1 9. The method according to claim 1 further wherein the step of
2 detecting and recording the heart sounds further includes prompting the user to re-record
3 one of the plurality of heart sounds when the one heart sound is determined to include an
4 error.

1 10. The method according to claim 1 further comprising the step of
2 displaying a prompt to allow a user to override the predetermined protocol.

1 11. A computer readable medium adapted to instruct a general purpose
2 computer to detect a plurality of heart sounds in an auscultatory process, the method for
3 comprising the steps of:

4 providing a predetermined protocol corresponding with a plurality of
5 recording locations on a patient;

6 instructing a user to follow the predetermined protocol for recording the
7 plurality of heart sounds at the plurality of recording locations using at least one of a voice
8 guided protocol and a graphical user interface; and

9 detecting and recording the heart sounds according to the predetermined
10 protocol.

11 12. An auscultatory diagnostic decision support system comprising:

12 a cardiac acoustic sensor to produce a heart sound signal;

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13 a heart sound analysis device adapted to receive and analyze the heart
14 sound signal; and

15 a display device including a graphical user interface (GUI) to guide a user
16 through a predetermined protocol.

1 13. The apparatus according to claim 12 further comprising means for
2 transmitting the heart sound signal to the heart sound analysis device by at least one of a
3 wire, an infrared signal, and a wireless signal.

1 14. The apparatus according to claim 12 wherein the GUI includes at
2 least one of:

3 a pull-down menu having a plurality operating languages for selecting an
4 operating language of the auscultatory diagnostic decision support system;

5 a pull-down menu having a plurality of auscultatory protocols for selecting
6 the predetermined auscultatory protocol; and

7 a pull-down menu having a plurality of recording site designations for
8 selecting a recording site designation of the auscultatory diagnostic decision support
9 system.

1 15. The apparatus according to claim 12 further comprising an earpiece
2 wherein the GUI includes an re-record option to allow a user to interrupt the
3 predetermined protocol and have the heart sound analysis device receive a second heart
4 sound signal.

1 16. The apparatus according to claim 12 wherein the heart sound
2 analysis device includes at least one of:

3 a general purpose computer;

4 special purpose circuitry; and

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5 an application specific integrated circuit.

1 17. The apparatus according to claim 12 wherein the GUI includes a
2 visual representation of an anterior thorax to guide the user and a plurality of positional
3 markers to pinpoint desired placements of the cardiac acoustic sensor on the anterior
4 thorax.

1 18. The apparatus according to claim 12 further comprising;

2 a speaker coupled to the display device; and

3 at least one of a pre-recorded voice track and text-to-speech software to
4 generate audio signals;

5 wherein the audio signals are transmitted by the by the speaker as a series
6 of audio prompts to guide the user through the predetermined auscultatory protocol.

1 19. The apparatus according to claim 12 wherein the cardiac acoustic
2 sensor is an electronic stethoscope.

1 20. The apparatus according to claim 19 further comprising;

2 at least one of a pre-recorded voice track and text-to-speech software to
3 generate audio signals;

4 wherein the audio signals are transmitted by an earpiece of the electronic
5 stethoscope as a series of audio prompts to guide the user through the predetermined
6 auscultatory protocol.

1 21. A user interface for an auscultatory diagnostic decision support
2 system comprising:

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3 a graphical user interface (GUI) to guide a user of the auscultatory
4 diagnostic decision support system through a predetermined auscultatory protocol
5 including;

6 a visual representation of a body portion of a patient;

7 a plurality of positional markers to pinpoint a plurality of auscultatory
8 measurement locations on the body portion; and

9 a visual presentation of a measured acoustic signal corresponding to
10 each auscultatory measurement location; and

11 a speaker to provide a voice guided protocol including a series of audio
12 prompts to guide the user through the predetermined auscultatory protocol.

1 22. The interface according to claim 21 wherein the speaker is at least
2 one of:

3 an earpiece of an electronic stethoscope; and

4 a speaker of a general purpose computer used to display the GUI.

1 23. The interface according to claim 21 wherein the series of audio
2 prompts identify the plurality of auscultatory measurement locations in an order
3 representing the predetermined auscultatory protocol.

1 24. The interface according to claim 21 wherein the series of audio
2 prompts include at least one of:

3 a posture prompt to identify a change in posture corresponding to at least
4 one of the plurality of auscultatory measurement locations;

5 a completion prompt to identify completion of the predetermined
6 auscultatory protocol; and

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7 an auscultatory maneuver prompt to identify a dynamic auscultatory
8 maneuver corresponding to at least one of the plurality of auscultatory measurement
9 locations.

1 25. The interface according to claim 21 wherein the body portion of the
2 patient included in the GUI is at least one of:

3 an anterior thorax;

4 a posterior thorax;

5 an anterior abdomen; and

6 a posterior abdomen.

1 26. A method for detecting a plurality of bodily sounds in an auscultatory
2 process comprising the steps of:

3 providing a predetermined protocol corresponding with a plurality of
4 recording locations on a patient;

5 instructing a user to follow the predetermined protocol for recording the
6 plurality of bodily sounds at the plurality of recording locations using at least one of a voice
7 guided protocol and a graphical user interface; and

8 detecting and recording the bodily sounds according to the predetermined
9 protocol.

10 27. The method of claim 26 wherein the plurality of bodily sounds include
11 at least one of heart sounds, lung sounds, and gastrointestinal sounds.

1 28. The method of claim 26 further comprising the step of analyzing the
2 recorded bodily sounds to determine auscultatory findings.

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1 29. A computer readable medium adapted to instruct a general purpose
2 computer to detect a plurality of bodily sounds in an auscultatory process, the method for
3 comprising the steps of:

4 providing a predetermined protocol corresponding with a plurality of
5 recording locations on a patient;

6 instructing a user to follow the predetermined protocol for recording a
7 plurality of bodily sounds at a plurality of recording locations using at least one of a voice
8 guided protocol and a graphical user interface; and

9 detecting and recording the bodily sounds according to the predetermined
10 protocol.

11 30. An auscultatory diagnostic decision support system comprising:

12 an acoustic sensor configured to produce a bodily sound signal;

13 a bodily sound analysis device adapted to receive and analyze the bodily
14 sound signal; and

15 a display device including a graphical user interface (GUI) to guide a user
16 through a predetermined protocol to obtain a sequence of bodily sound signals for use by
17 the bodily sound analysis device.